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## **THE ROMANIAN CIVIL AEROSPACE MARKET**

### **SUMMARY**

During the last ten years, Romania's civil aviation sector has gone through a painful process of restructuring and reorganization, in an effort to become more competitive and better prepared to operate in a market economy. Although this process is still underway, currently the main trends for this sector's future development can be assessed more accurately, and the business opportunities in the sector's major segments are easier to identify.

The most promising sub-sector is the one for aircraft and parts. The restructuring and modernization of the national airline, the coming into being of new, privately-owned, air carriers, and the upgrading of general aviation fleets are all expected to lead, over the next few years, to a steady growth in the Romanian import market for commercial aircraft and parts.

Good potential for growth is also found in sub-sectors related to airport infrastructure development and airport security and safety. Currently, as part of a masterplan regarding airport development through the year 2015, modernization projects are underway at all of the country's airports. They include runway lengthening and widening, runway strength upgrading, installing high-intensity light approach systems, expanding and upgrading airport terminal facilities and, most importantly, improving airport safety.

Finally, the high-technology sub-sector of air traffic control, which has enjoyed particular attention during the last ten years, is expected to continue to generate business opportunities, especially in conjunction with the implementation of inter-regional air traffic management projects.

Although faced with strong competition coming mostly from Western European companies, U.S. firms are well represented on the Romanian aerospace market. Best prospects for U.S. exports include aircraft and aircraft parts, airport terminal and airport security equipment, and air traffic control equipment.

### **MARKET OVERVIEW**

#### **Aircraft and Aircraft Parts**

Romanian demand for aircraft and parts is expected to witness a moderate but constant increase over the next years. The market will be dominated by purchases made by the national carrier, Tarom. Purchases to be made by smaller air carriers (Romavia, CarpatAir, Angel Airlines) and by general aviation companies will also contribute to this market's upsurge. In addition, the country's four aircraft factories and all of the auxiliary facilities producing for the aerospace industry routinely import aircraft parts and supplies for their manufacturing programs.

Tarom has a fleet of 20 aircraft: A-310 (2 ea), B-737-300/500 (7 ea), B-737-700 (2 ea), ATR 42-500 (7 ea), and B-707 cargo (2 ea). Major procurement on the horizon will include two B-737-700's scheduled to be delivered in November-December 2003 (with four more planned for later years) and several short-courier aircraft, which will gradually replace the existing ATR-42-500 fleet used on domestic and regional lines.

Romavia, a public corporation, operates special VIP flights, as well as domestic and international scheduled and charter flights. It has a fleet of 8 aircraft: B-707 (1 ea), BAC 1-11-500 (3 ea), IL-18 (2 ea), and Mi-8 (2 ea). Romavia's fleet modernization plans depend on the availability of funds from the state budget. A business jet (BBJ), a medium range aircraft, and a long range aircraft, all for VIP flights, will be top on Romavia's shopping list when funds become available.

CarpatAir and Angel Airlines are small private airlines. CarpatAir, a Romanian-Swiss joint venture, provides regional flights to Italy, Germany, Hungary, and Moldova. It has a fleet of 6 aircraft: SAAB-340 (4 ea), YAK-40 (1 ea), and Hawker-800XP (1 ea). Angel Airlines operates scheduled and charter flights from Bucharest to eight domestic destinations. Currently, its fleet consists of two Jetstream 32 aircraft. Both companies have good chances of increasing their business, a fact that will generate a need for more aircraft purchases.

General aviation services are provided by seven companies, each of them serving a large region of the country (Bucharest, Timisoara, Cluj, Iasi, Craiova, Calarasi, and Tuzla). With the exception of the Timisoara General Aviation, all of these companies are private. Bucharest General Aviation, the largest of all, has a fleet of 18 aircraft (AN-2 planes, KA-26 helicopters, and Alouette III-B helicopters). Services currently offered by general aviation companies include ambulance services, crop spraying, forest fire surveillance/fighting, aerophotogrammetry, air taxi, and training flights. The diversification and upgrading of general aviation services will call for purchases of new aircraft to replace current aging fleets. Industry sources estimate that demand will concentrate on Eurocopter, Bell-222 and Robinson-44 helicopters, micro-light aircraft for services to small farmers, and small jet planes to help upgrade the air taxi service.

## **Airport Infrastructure**

Romania has 17 airports, of which four (Bucharest-Otopeni, Bucharest-Baneasa, Timisoara, and Constanta international airports) are under the Ministry of Transport and 13 are under the administration of local authorities. According to Romanian Government policy, all airports may be privatized. Individual plans for airport privatization are closely linked with plans for airport renovation, diversification, and expansion.

While the four airports under the Ministry of Transport are likely to have easier access to funding for their development plans, the other airports will continue to have very limited investment funds at their disposal, mainly because local authorities are forced to channel meager financial resources to other, more vital, investment. However, initiatives coming from the private sector, Romanian and foreign, may

support investment at some of the best-located regional airports.

#### Expansion and Modernization of Bucharest-Otopeni International Airport

The project's first stage (1994-1998; cost: \$123 million, of which \$70 million for imports of equipment and materials) included mainly the building of a new terminal for passenger departures (1,000 pax/peak hour) and of a finger connecting the new terminal to the old one and having five airbridges.

The project's second stage (2000-2004; estimated cost: \$100 million) has so far included the modernization of the old terminal, which now handles only arrivals (1,000 pax/peak hour), the building of a new cargo terminal (final capacity: 100,000 tons per year), and the building of a three-level parking facility for about 1,000 cars. The building/extension of two taxiways and the enlargement of the aircraft apron are underway. Investment to be completed by 2004 includes the building, within the arrivals terminal, of a section for domestic arrivals, the modernization of the control tower, and the completion of several administrative buildings.

Project-related imports have so far included such state-of-the-art equipment as Jetway Systems airbridges (U.S.), Safegate automatic docking systems (Sweden), Fresia towing tractors (Italy), snow sweepers/blowers (Norway, Germany, Italy), and L3 Communications (former AG&G Astrophysics/Perkin Elmer Instruments) baggage scanners (U.S.).

The contractor for the implementation of the first two stages of the airport's expansion and modernization has been Romairport, an Italian-Romanian joint venture including Italstrade SpA Milano, SEA-Aeroporti di Milano, and CCCF Bucharest.

It is estimated that Bucharest-Otopeni is now able to process a total of up to 3.5 million passengers per year.

The third stage of the airport's expansion (2005-2015) will have as its main investment the construction of a second finger (increasing the number of air bridges from 5 to 12). The building of a four-star transit hotel for 200 guests, of a business center located in the vicinity of the airport, of a technological park, and of a shopping mall in the airport area are also part of the airport's development plans. These auxiliary investments will rely mostly on private capital and will involve 49-year land-lease arrangements. When this complex expansion and modernization project is completed, Bucharest-Otopeni will become one of the most modern airports in Central and Eastern Europe.

#### Upgrading of the Bucharest-Baneasa International Airport

The Ministry of Transport has approved an ample long-term development plan for this oldest international airport of the country. Because of its current proximity to the city center, which calls for special measures regarding noise abatement, this airport will specialize in flights with lighter aircraft (scheduled and charter regional flights; general aviation; VIP flights; airtaxi services; courier cargo flights). The long-term development plan provides for the building of: three new terminals (for VIP

flights, general aviation, and cargo) with the necessary aprons and taxiways; a shopping mall; an underground parking facility for 2,000 cars; a business center; and a transit hospital. This impressive plan will start with investment earmarked for the modernization of the airport's control tower, the upgrading of the runway lighting system, the building of the terminal for VIP flights (capacity: 20 pax/peak hour), and the building of the shopping mall, which is expected to contribute importantly to an increase in the airport's revenues.

The airport is currently trying to supplement funds from the state budget by attracting private investment for its projects.

#### Upgrading of the Timisoara International Airport

With about 200,000 passengers a year, Timisoara is the second busiest Romanian airport. Its good location near the country's borders with Hungary and Serbia and the increasingly important role it plays in regional traffic predict well for its development (forecast for 2015: 1.5 million passengers).

Investments during 2003-2004 will be used for: terminal modernization and expansion (estimated cost: Euro 1.4 million), expansion of the apron and building of a fast taxiway (estimated cost: Euro 1.3 million), installing terminal and ground surveillance equipment, expansion of the parking lot (from 160 to 500 cars; estimated cost: Euro 50,000), and the construction of an office building (estimate cost: Euro 300,000). Long-term development plans (2005-2015) include the expansion and upgrading of the cargo terminal (2006; estimated cost: Euro 200,000), building of a business center (2008; estimated cost: Euro 3 million), expansion of the parking facility by 500 places (estimated cost: Euro 150,000), and the building of a hotel (2015; estimated cost: Euro 3 million).

Financing for these projects will come from three sources: state budget, airport revenues, and private funds. To encourage local authorities to invest in the airport's development, the Ministry of Transport intends to transfer 40% of the airport's shares to the Timis County Council. The Ministry would also be interested in a public-private partnership for the development of the airport.

#### Upgrading of the Constanta-Kogalniceanu International Airport

With its excellent location near the Black Sea port of Constanta, this airport has very good chances to develop at a fast pace. In recent months, it has received considerable attention due to the fact that it has been selected as a transit airport for U.S. military involved in missions and operations in the Balkans and the Middle East. However, its long-term development plans take into account mainly an expected increase in passenger and cargo traffic generated by a more vibrant commercial and tourist activity in the region (Black Sea resorts, attractive destinations in the Danube Delta, archaeological sites).

Airport upgrades scheduled for 2003-2004 include the overhaul of the runway and the modernization of its lighting system. Investment to be made during 2005-2015 will be earmarked for: airport terminal modernization and complete upgrading of airport equipment (2006-2010), installing an electronic surveillance system (2006-2007), building of a parking facility for heavy vehicles, and building of a cargo terminal (2011-2015).

### Upgrading of the Cluj-Napoca International Airport

In recent years, this small Transylvanian airport has seen a marked increase in its traffic. Currently it handles flights to Budapest, Vienna, Munich, Frankfurt, Bologna, Treviso, Florence, Bergamo, and Rome, and, with more than 100,000 passengers in 2002 (transit traffic not included), it ranks third among Romanian airports in traffic volume. Over the short-to-medium term, investment related to the airport's upgrading will be earmarked for the building of a cargo terminal; the lengthening of the runway from 1,850 meters to 2,100 and on to 2,500 meters; the further modernization of the runway lighting system; and the installation of a new visual approach system.

The feasibility study for the building of the cargo terminal has been completed, and the Cluj County Council is now seeking a partner to support this investment.

### Upgrading of the Arad International Airport

The airport enjoys a very good location: close to the Romanian-Hungarian and the Romanian-Serbian borders, close to a projected European highway going from Bucharest to the country's Western border, and in the immediate vicinity of a free trade zone and a projected industrial park. Currently, the airport handles regular domestic flights as well as regional flights to Ancona, Treviso, Verona, and Stuttgart. Short-to-medium term plans for the upgrading of the airport include the construction of a cargo terminal (in progress), the completion of the infrastructure (15 hectares) for the airport's free trade zone sector, and the lengthening of taxiways (by 2005). Long-term plans include the lengthening of the runway (to 3,500 meters), the building of a new passenger terminal, the upgrading of the parking facility, and the building of a transit hotel. Feasibility studies for all of these projects have been prepared.

The airport's main shareholder, the Arad County Council, is currently seeking a specialized Western company to manage the cargo terminal and share in the profit (70% cargo company; 30% County Council). The terminal is located near the free trade zone, includes a warehouse, a weighting house, a customs-check facility with a storage capacity of 700 tons/day, an operational apron for aircraft, and a platform for vehicles.

The Arad County Council is also interested in the privatization of the airport.

### **Airport Security and Safety Equipment**

By western standards, traffic at Romanian airports is relatively low. In 2002, Bucharest-Otopeni handled 2,120,000 passengers (transit traffic not included), while all of the other airports handled a total of about 500,000 passengers.

However, this traffic pattern is expected to change considerably in the near future. According to projections, the modernization of the country's main airports coupled with an improved business environment and a more aggressive promotion of tourism in Romania will generate an increase in both

passenger and cargo traffic. In 2003, Bucharest-Otopeni expects to see a 10% increase in passenger traffic. Sharp increases are also likely to be seen at Constanta-Kogalniceanu, Timisoara, and Cluj-Napoca, which enjoy good locations for both commercial activities and tourism.

The anticipated upward trend in passenger and cargo traffic at Romanian airports, as well as the recent increase in worldwide terrorism, has made Romanian airport operators pay more attention to problems raised by airport security and safety and earmark more funds for security upgrades.

An important initiative in this respect was taken by Bucharest-Otopeni international airport, which introduced a \$5 security fee per departing passenger as of August 15, 2002. This fee is included in the cost of tickets, and the funds generated by it (about \$5 million a year from about 1 million passengers departing Otopeni) will be used for security equipment procurement.

Baggage Screening. The modernization of baggage screening has been a priority since 1996. All Romanian airports, international and domestic, have been equipped with modern TSA-certified Linescan (L3 Communications) units. Of a total of 100 X-ray screening units at Romanian airports, 97 are U.S.-made and three are German-made (Heimann 1992). TSA audits are periodically carried out at Romanian airports that handle international traffic.

Romania complies with the ECAC requirement of screening all hold baggage. Currently, conventional dual-energy system X-ray units (requiring 10% manual search) are used. They are manufactured by L3 Communications and are TSA-certified. To cope with an anticipated increase in passenger traffic, by the end of 2003 Bucharest-Otopeni airport will introduce fully automated X-ray units with a multiple-level explosives detection system (EDS). As a result, manual search will drop to less than 1%. Suppliers of automated units will include, among others, such U.S. manufacturers as L3 Communications and In-Vision Technologies. Screening will take place in the make-up area of the airport. The check-in area will become a public area that will be closely monitored by CATV and other security means.

Currently, both hold baggage and cabin baggage is screened at the same checking points. However, by the end of 2003, there will be separate units for the screening of cabin baggage.

Passenger Screening. Walk-through metal detector gates and hand-held wands for metal detection are used at all airports. In use at Romanian airports are about 70 Metor 200 (Metorex) gates and 5 Ceia (Italian-made) gates.

Baggage Reconciliation. Responsible for baggage reconciliation at all Romanian airports are the air carriers, which use their own systems. All carriers keep baggage-tag and boarding-pass information on computers, but none of the reconciliation systems is automated. According to airport authorities, baggage reconciliation is an open problem which will have to be addressed as soon as financial conditions permit.

Access Control. At most airports, the equipment used for the control of access to airport buildings is of conventional type. Closed circuit TV systems and cipher locks on doors are standard. Only major

airports use systems that integrate employees' swipe cards and electronically controlled doors. Modern tracking systems are on the shopping list of all airports.

Of special importance is the surveillance of access to the airport ground. In late 2002, Bucharest-Otopeni airport launched a tender for the building of a modern airport perimeter security system. The contract (value: about \$15 million) was awarded to the Israeli company Magal. The project will be completed in the next two years, and will include the building of 22 kilometers of 3-meter high intelligent fences, plus access control points equipped for screening all persons and goods entering the airside. Ground surveillance radars and infrared/microwave sensors for runway and taxiway surveillance will continue to be of interest to Romanian airports.

Security Personnel. At all Romanian airports, there is a Security Dispatch in charge of coordinating all airport security measures. Individual tasks are carried out by the following entities: the Anti-Terrorist Brigade (under the Romanian Intelligence Service), the Border Police (under the Ministry of Interior - MoI), the Airport Police (under MoI), the Gendarmerie (under MoI), and the Airport Security Corps, a civilian organization subordinated directly to the airport management. Each of these entities has precise duties, which are integrated within the national civil aviation security program.

Romanian airport authorities are acutely interested in security personnel training, with special emphasis on the technical aspects of using modern sophisticated equipment and on the interpretation of the complex data supplied by such equipment.

### **Air Traffic Control Equipment**

The subsector of air traffic control (ATC) equipment is a closely-defined restricted user market. The largest single end user of civil ATC equipment is the Romanian Air Traffic Services Administration (ROMATSA), a self-financing public corporation under the supervision of the Ministry of Transport and a member of Eurocontrol since 1998. With its modern area control centers (ACCs) and air navigation departments at all of Romania's airports, ROMATSA provides en-route navigation services over Romanian air space and part of the Western Black Sea airspace, as well as area control, airfield control, flight information, meteo information, and airport alerting services. As much as 90 percent of ROMATSA's revenues come from overflight fees.

Since 1991, when Romania started its air traffic management (ATM) system modernization project, the ATC sector has had an impressive development. Purchases of state-of-the-art equipment made by ROMATSA substantially increased its air space control capacity, allowing it to become fully compatible with ICAO standard and recommended practices (SARPs) and Eurocontrol requirements. Purchases included primary, secondary, and monopulse secondary surveillance radars (PSR, SSR, and MSSR); flight plan and radar data processing systems (FPPS, RDPS); airport navigation aids/systems: Doppler VHF omni-directional radios (DVOR), distance measuring equipment (DME), instrument landing systems (ILS), non-directional beacons (NDB); VHF radio ground-to-air communication stations; ATC voice and data communication systems; meteorology equipment (meteo radars included); and ATC training simulators. The equipment was bought with the assistance of European Investment Bank loans

and was supplied by Italian, French, UK, German, and U.S. companies. Major suppliers were Alenia and Thomson. Airport Systems International Instruments (ASII) supplied U.S.-made NDB's , DVORs, and DMEs, while Hewlett-Packard supplied computer equipment.

Currently, ROMATSA has three ACCs, located in Bucharest, Arad, and Constanta. Two former ACCs, located in Cluj-Napoca and in Bacau, are now in charge of the control of lower airspace only. According to the ATM system modernization project, further investment will concentrate on upgrading the Bucharest ACC. By 2010-2015, all area-control activity will be conducted from Bucharest, with two secondary locations in Arad and Constanta serving as back-ups for Bucharest in case of need.

After having reached a peak at the turn of the century, the ATC equipment market is now more or less stagnant. This situation is not unusual in this subsector where, due to the nature of ATC projects and the limited number of end-users, the value of the market can register sharp increases or decreases from one year to another. ROMATSA experts point out that the equipment currently in use is very modern, and will meet their needs for several years before it depreciates. It is, therefore, only in 2005-2006 that ROMATSA will start looking for a new generation of ATC equipment.

An important segment of the Romanian ATC equipment market is the one controlled by the military. The Military ATC Authority is under the Staff of the Air Force and Air Defense of Romania's Ministry of National Defense. It has ACC's, located at the same places as the civil ones, as well as ATC departments at all airports with military activity. Dual-use (military/civil) ATC equipment is operated by both ROMATSA and the Military ATC Authority.

It is in the dual-use ATC equipment segment that U.S. manufacturers of ATC equipment have recorded exceptional success, covering the largest portion of the Romanian import market. A \$82 million project for the delivery of five FPS-117 long-range surveillance dual-use radars was completed by Lockheed Martin in 1999. Currently, the system functions at full capacity, with an availability rate of 98%, being also used by ROMATSA. The FPS-117 radars are integrated with Romania's Air Sovereignty Operation Center, a \$5 million project that was completed by Lockheed Martin in 1999, on U.S. funds allocated through the Warsaw Initiative. Thanks to this integration, Romania's air space surveillance infrastructure is currently the most modern in Central and Eastern Europe.

The prospects for U.S. exports of dual-use ATC equipment over the short-to-medium term are quite good. They are mainly connected with a large project for the co-production of low-altitude mobile tri-dimensional gapfiller radars. Under this project, Lockheed Martin will transfer technology to Romania to help it manufacture, and export, gapfiller radars. A \$12 million pilot project including prototype manufacturing, extensive training, and production preparation is underway. The anticipated value of U.S. exports for this project is \$130 million. The radars are to be used for low altitude air space surveillance, landing at civil and military airports, control of low altitude illegal flights, and search and rescue missions.

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